

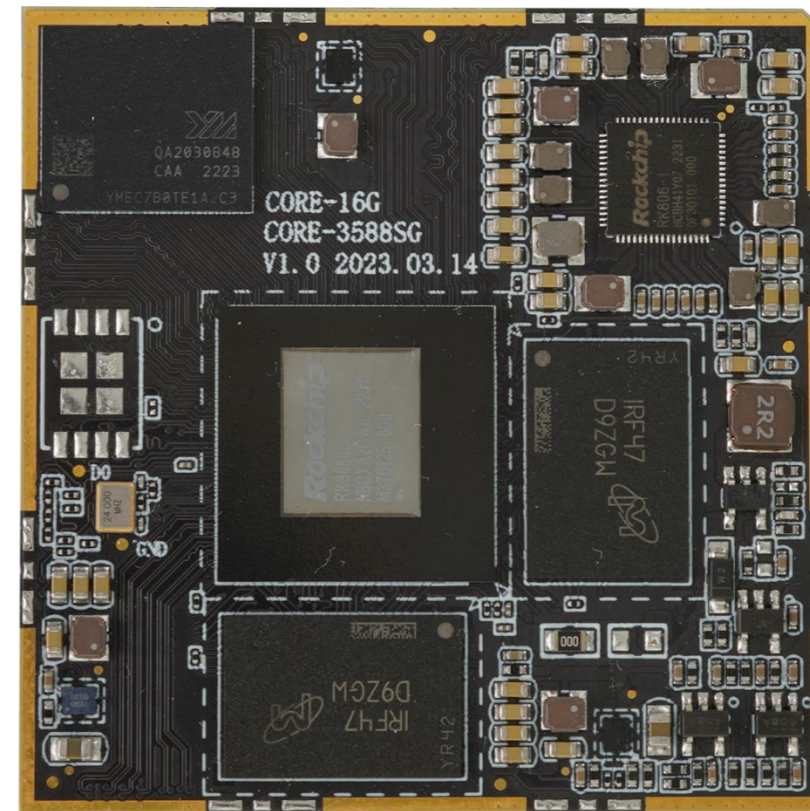


# Core-3588SG

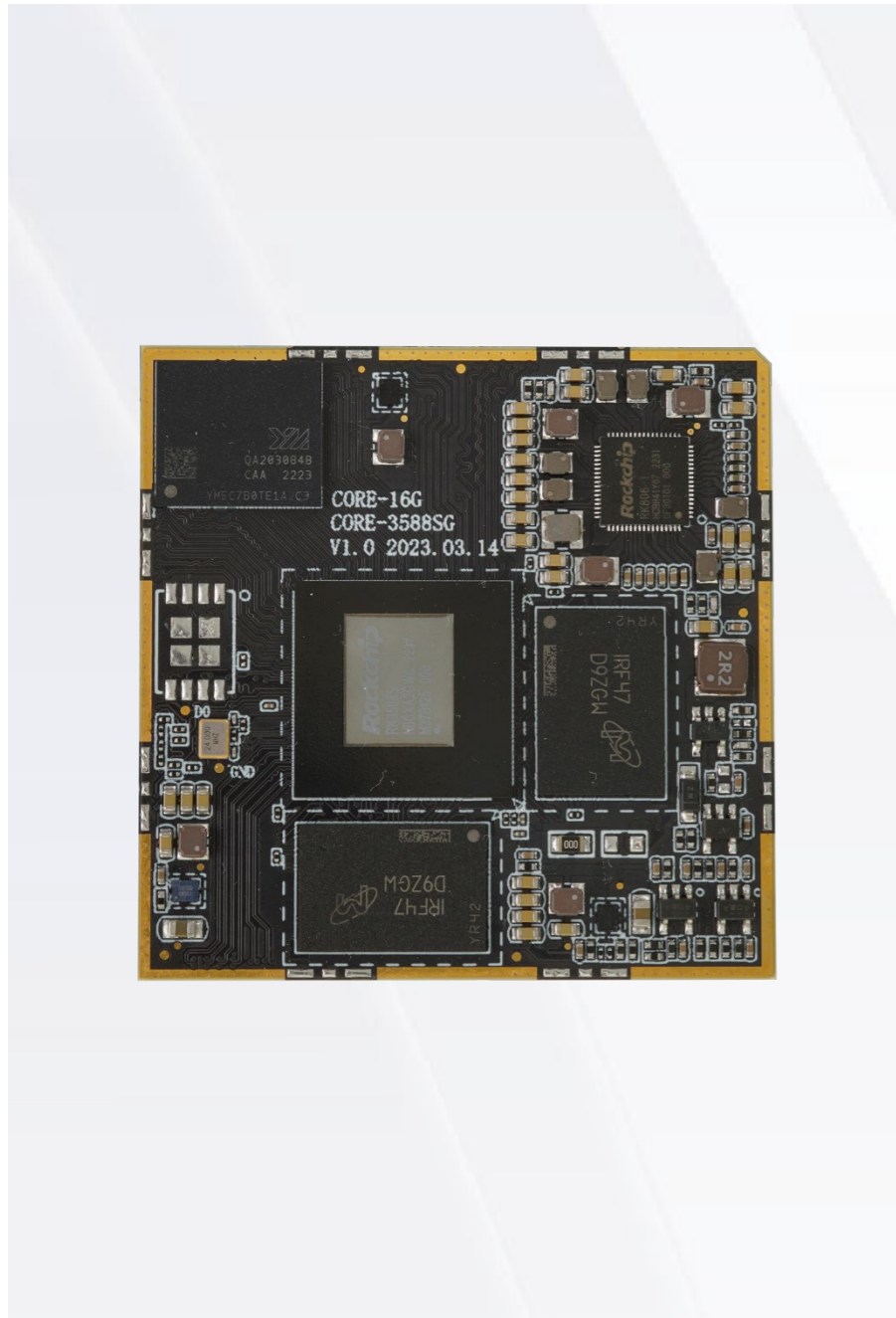
| Octa-core 8K AI Core Board

V1.0 2025-3-12

T-CHIP INTELLIGENCE TECHNOLOGY

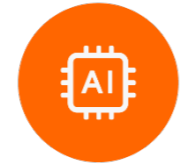


# Product features



## New-gen AIoT SoC RK3588S

RK3588S is Rockchip's new-gen flagship AIoT SoC with the 8nm lithography process. Equipped with an octa-core 64-bit CPU, its frequency is up to 2.4GHz.



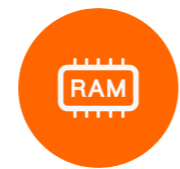
## Built-in 6TOPS powerful computing power NPU

Supports mixed operations such as INT4/INT8/INT16, and can achieve network model transformation based on TensorFlow/MXNet/PyTorch and other frameworks.



## 8K video encoding and decoding

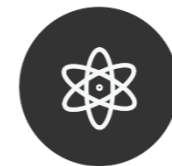
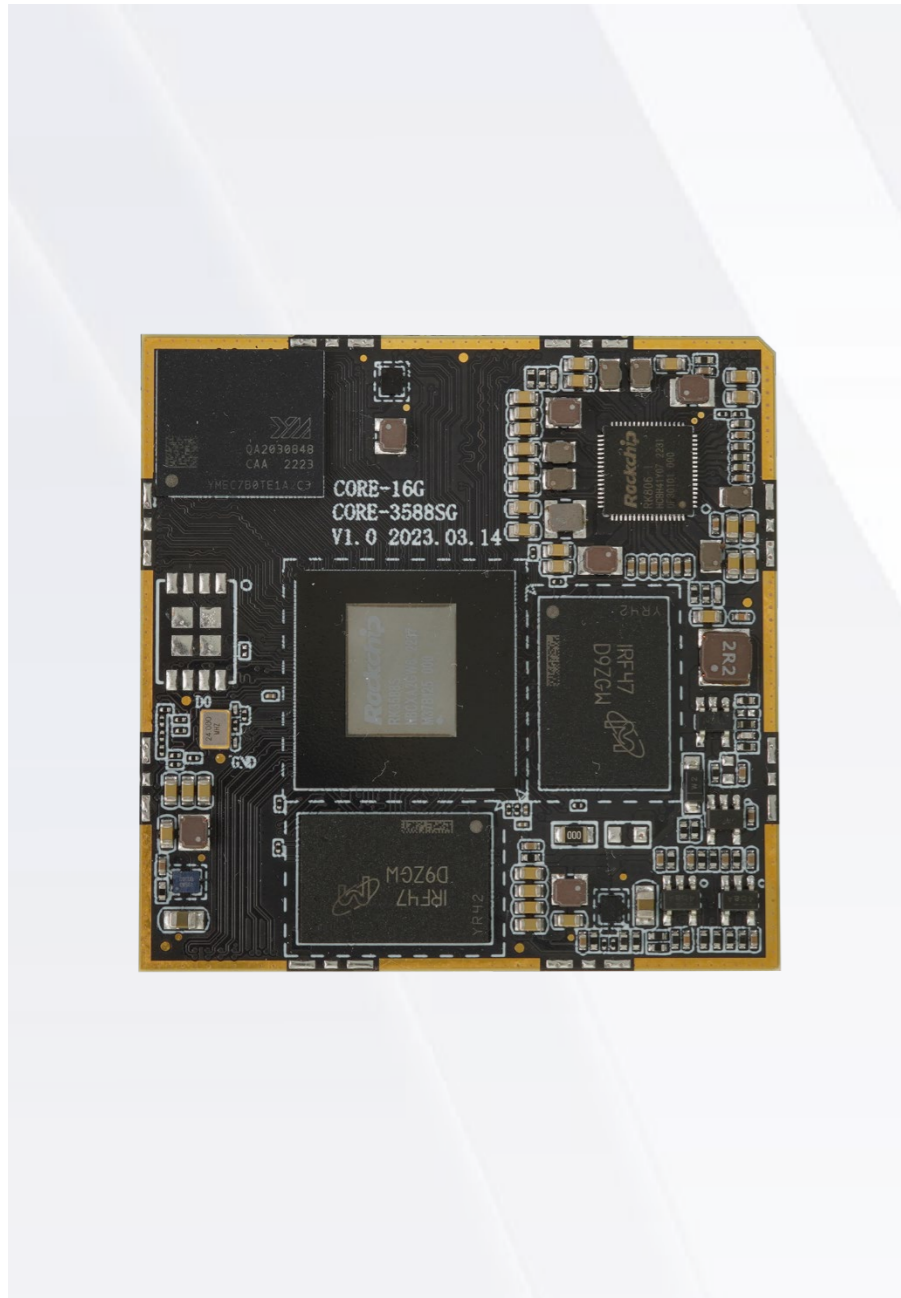
The computer supports 8K@60fps H.265/VP9 video decoding and 8K@30fps H.265/H.264 video encoding. It also supports encoding and decoding simultaneously – up to 32-channel 1080P@30fps decoding and 16-channel 1080P@30fps encoding can be achieved.



## Super-large 32GB RAM

Up to 32GB of super-large RAM can be configured, exceeding the limit of the previous RAM and delivering a faster response time. It is able to meet the product requirements for large RAM and high storage capacity.

# Product features



## **BGA package, smaller and more powerful**

The core board uses a BGA package with a compact design—containing a total of 371 pins, which bring out all the chip interfaces. It can be applied to various intelligent products, accelerating product development.



## **Strong network communication capability**

Integrated with PCIe/GMAC/SDIO3.0/USB3.0, it can be extended to Gigabit Ethernet, WiFi 6/Bluetooth, 5G/4G LTE, enabling higher-speed network communication.



## **Supporting various operating systems**

Android 12.0, Ubuntu, Debian11, Buildroot, RTLinux and Kylin Linux are supported. The reliable operation provides a safe and stable system environment for product research and production.



## **A wide range of applications**

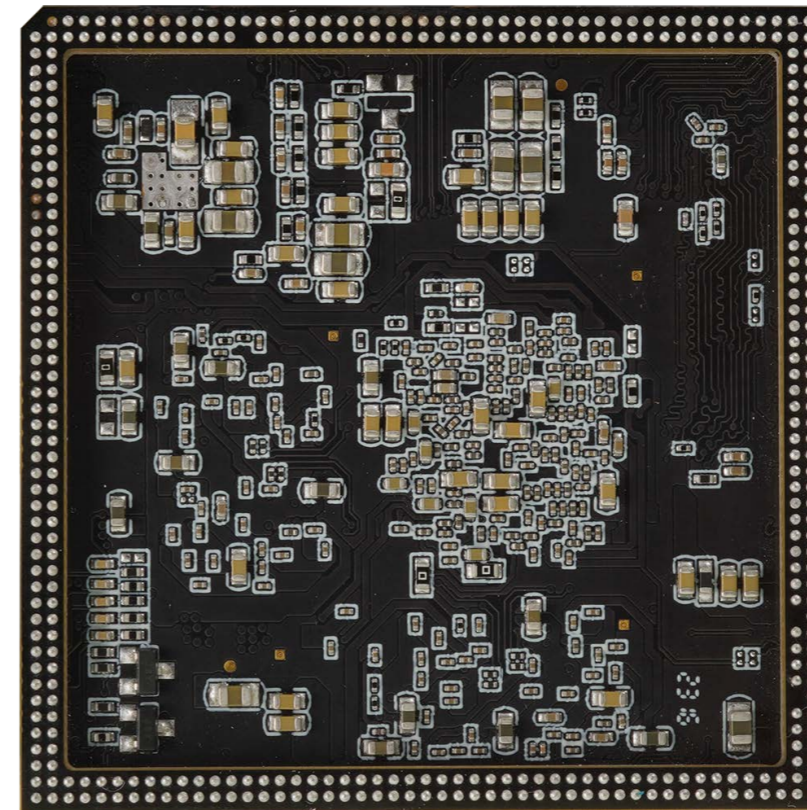
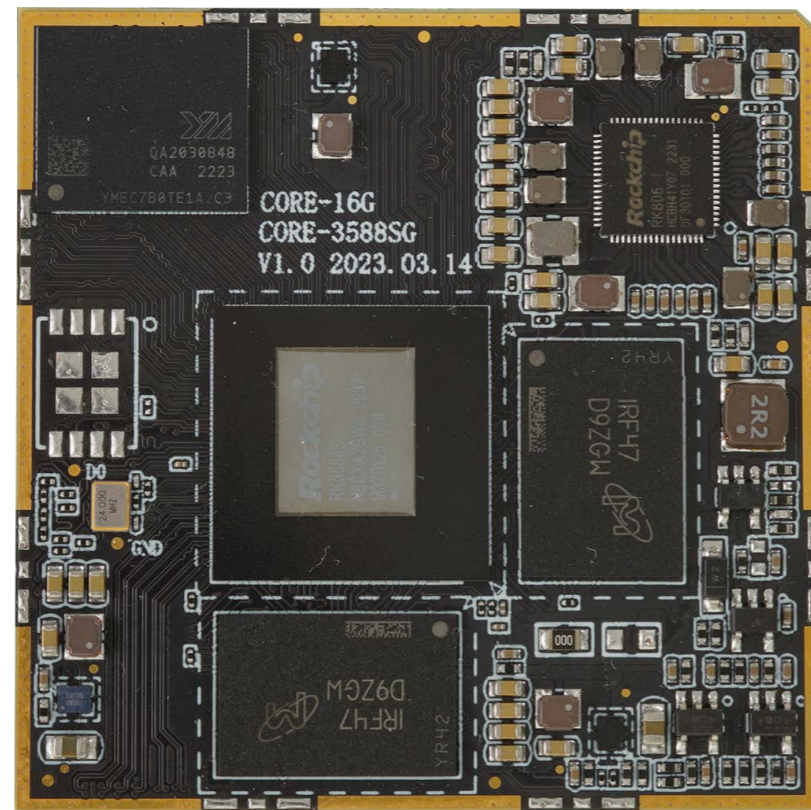
The core board can be widely used in edge computing, Artificial Intelligence, cloud computing, VR/AR, blockchain, smart security, smart home, intelligent retail and smart industry.

# Specifications



Specifications		
Basic Specifications	SOC	RK3588S
	CPU	Octa-core 64-bit (4xCortex-A76 + 4xCortex-A55), 8nm lithography process, up to 2.4GHz
	GPU	ARM Mali-G610 MP4 GPU, support OpenGL ES3.2/OpenCL 2.2/Vulkan1.1, 450 GFLOPS
	NPU	6 TOPS, support INT4/INT8/INT16 mixed operation, support framework switching of TensorFlow/MXNet/PyTorch/Caffe
	Codecs	Decoding: 8K@60fps H.265/VP9/AVS2, 8K@30fps H.264 AVC/MVC, 4K@60fps AV1, 1080P@60fps MPEG-2/-1/VC-1/VP8 Encoding: 8K@30fps H.265/H.264
	RAM	4GB/8GB/16GB/32GB 64-bit LPDDR4/LPDDR4x
	Storage	16GB/32GB/64GB/128GB/256GB eMMC
	Power	Voltage 4V(±5%), electric current 4A or higher recommended
	OS	Android 12.0, Ubuntu, Debian11, Buildroot, RTLinux, Kylin Linux
	Size	50mm × 50mm
	Interface Type	BGA371(body: 50mmx50mm; ball size: 0.5mm; ball pitch: 1.0mm)
	Weight	≈16g
	Power Consumption	Normal: 1.0W(4.0V/250mA), Max: 11.2W(4.0V/2800mA), Min(sleep): 0.06W(4V/15mA)
	Environment	Operating Temperature: -20°C ~ 60°C, Storage Temperature: -20°C ~ 70°C, Operating humidity: 10% ~ 90%RH (non-condensing)
Interface Specifications	Internet	Integrated GMAC/SDIO3.0/USB3.0, expandable 1 Gigabit Ethernet, WiFi6/Bluetooth, 5G/4G LTE
	Video Output	1 × HDMI2.1(8K@60fps or 4K@120fps, multiplexed with eDP1.3), 1 × eDP1.3(4 Lanes, 4K@60Hz, multiplexed with HDMI2.1), 2 × MIPI-DSI(4K@60fps), 1 × DP1.4(8K@30fps), 1 × BT.1120(1080@60fps) * Up to four-screen output with different displays can be achieved
	Video Input	2 × MIPI DC (4 Lanes DPHY v2.0 or 3 Lanes CPHY V1.1) 1 × MIPI CSI (4 Lanes) or 2 × MIPI CSI (2 Lanes) 1 × DVP camera interface(up to 150MHz data input)
	Audio	2 × I2S(8 Lanes), 2 × I2S(2 Lanes), 2 × SPDIF, 2 × PDM(8 Lanes, support multi-Mic array), 1 × dual-channel digital audio codec(16-bit DAC), 1 × VAD
	PCIe/SATA	2 × PCIe2.1(multiplexed with SATA3.0), 2 × SATA3.0(multiplexed with PCIe2.1)
	USB	1 × USB3.1(Gen1) (OTG), 1 × USB3.1(Gen1) (HOST), 2 × USB2.0 (HOST), 1 × USB2.0 (OTG)
	Other Interfaces	9 × I2C, 10 × UART, 5 × SPI, 12 × ADC, 3 × CAN, 16 × PWM, 1 × SDMMC, Multiple GPIO

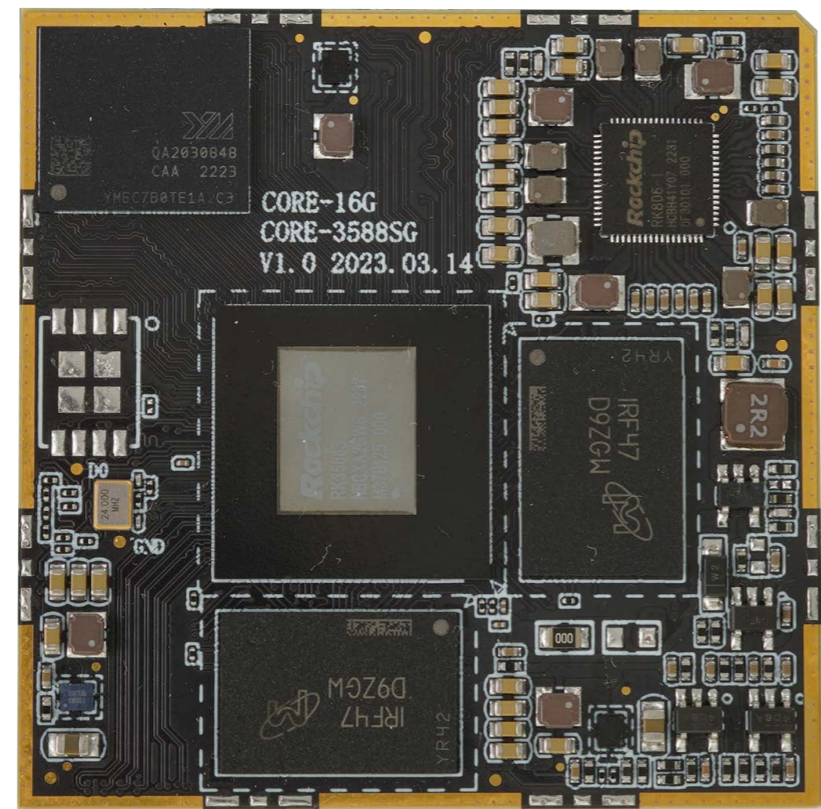
# Core board Interface description



BGA371  
ball size: 0.5mm  
ball pitch: 1.0mm

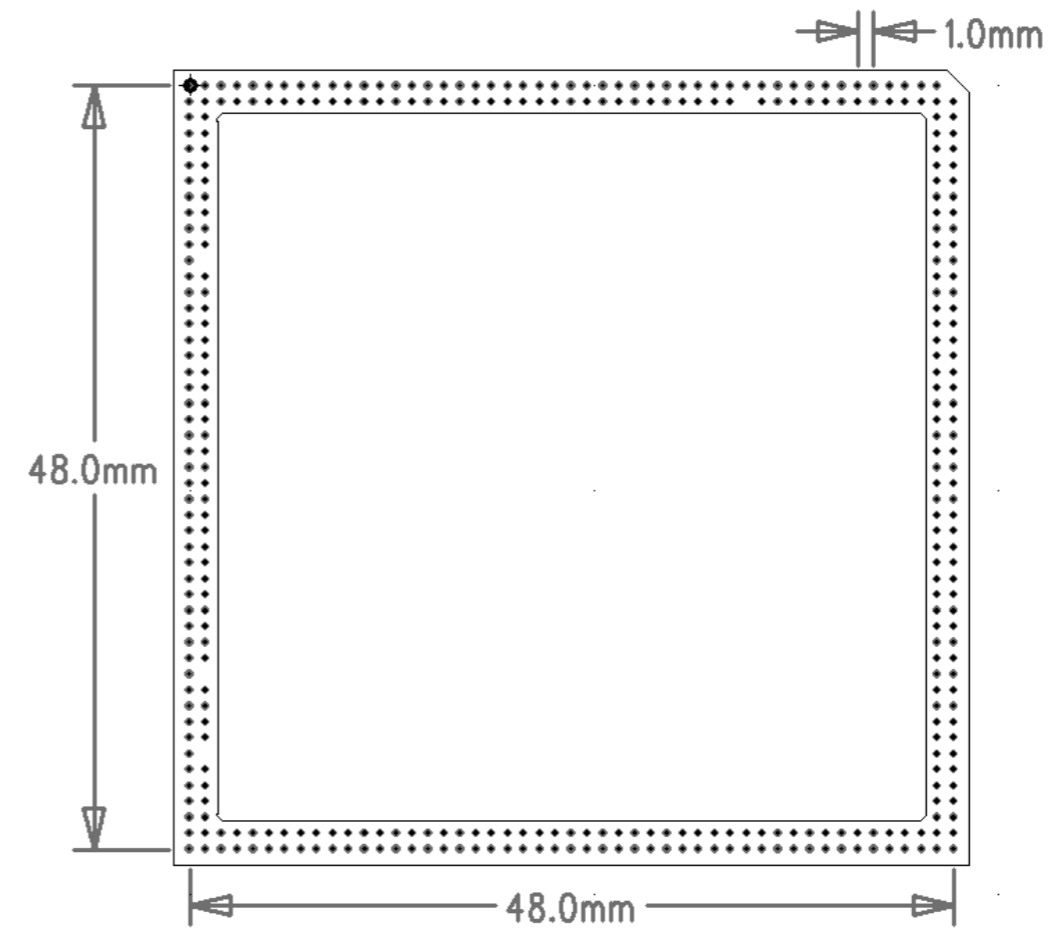
- |         |         |          |          |        |     |
|---------|---------|----------|----------|--------|-----|
| PCIe2.1 | SATA3.0 | UART     | CAN      | SPDIF  | I2S |
| SDIO3.0 | GPIO    | MIPI-DSI | MIPI-CSI | USB3.1 | SPI |

# Core board Dimension



50 mm

50 mm



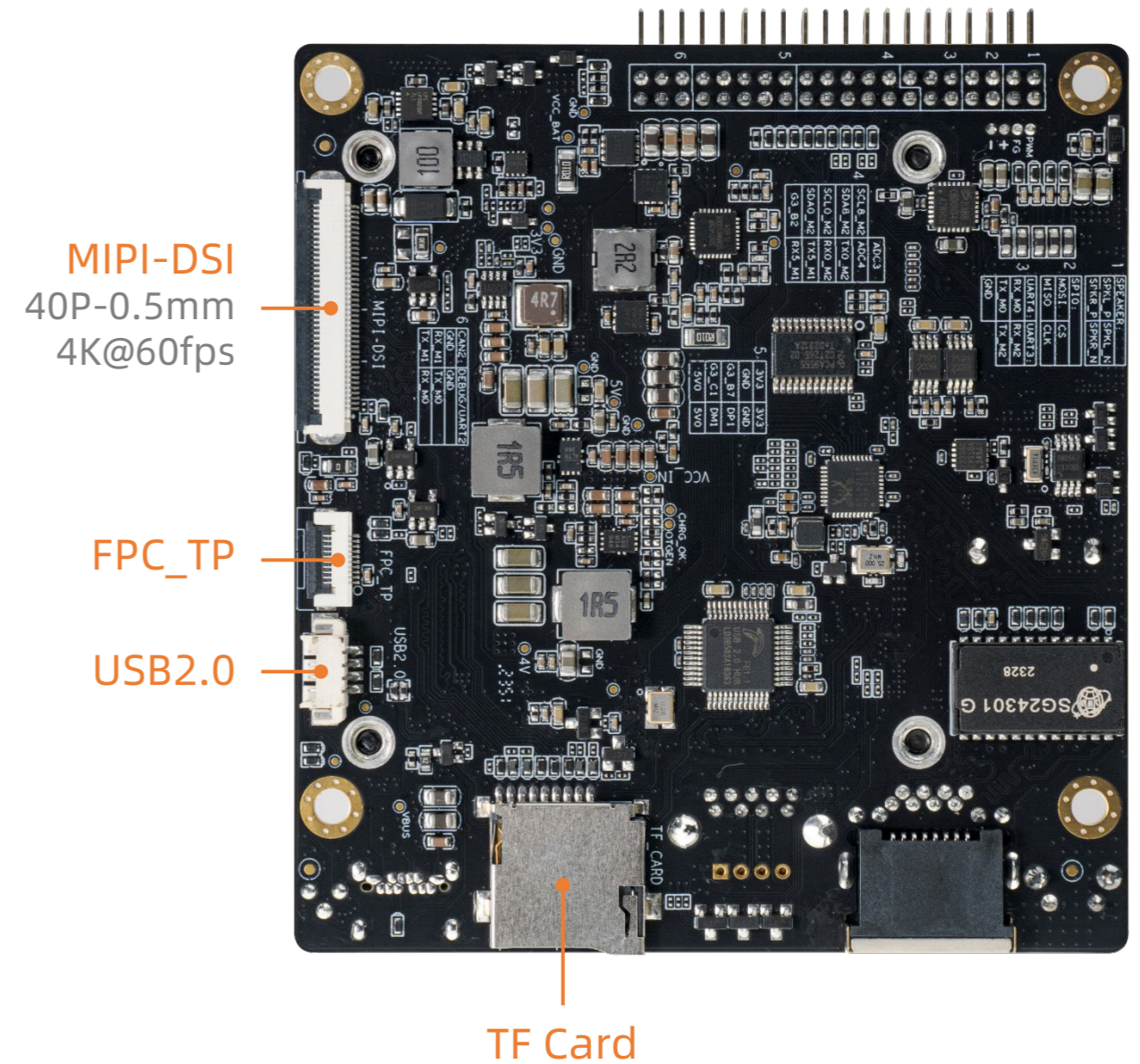
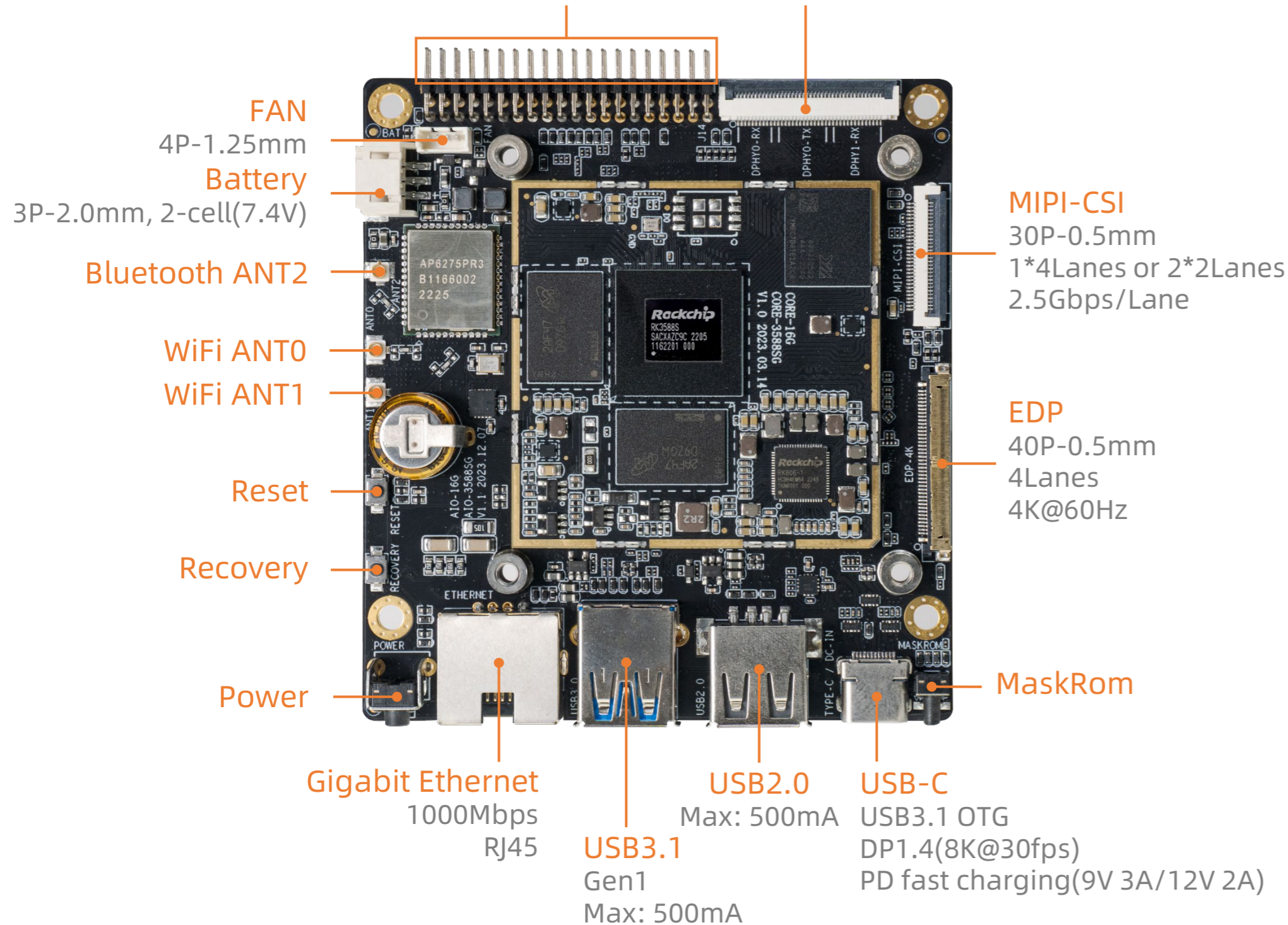
**BGA371**  
body: 50mm\*50mm  
ball size: 0.5mm  
ball pitch: 1.0mm



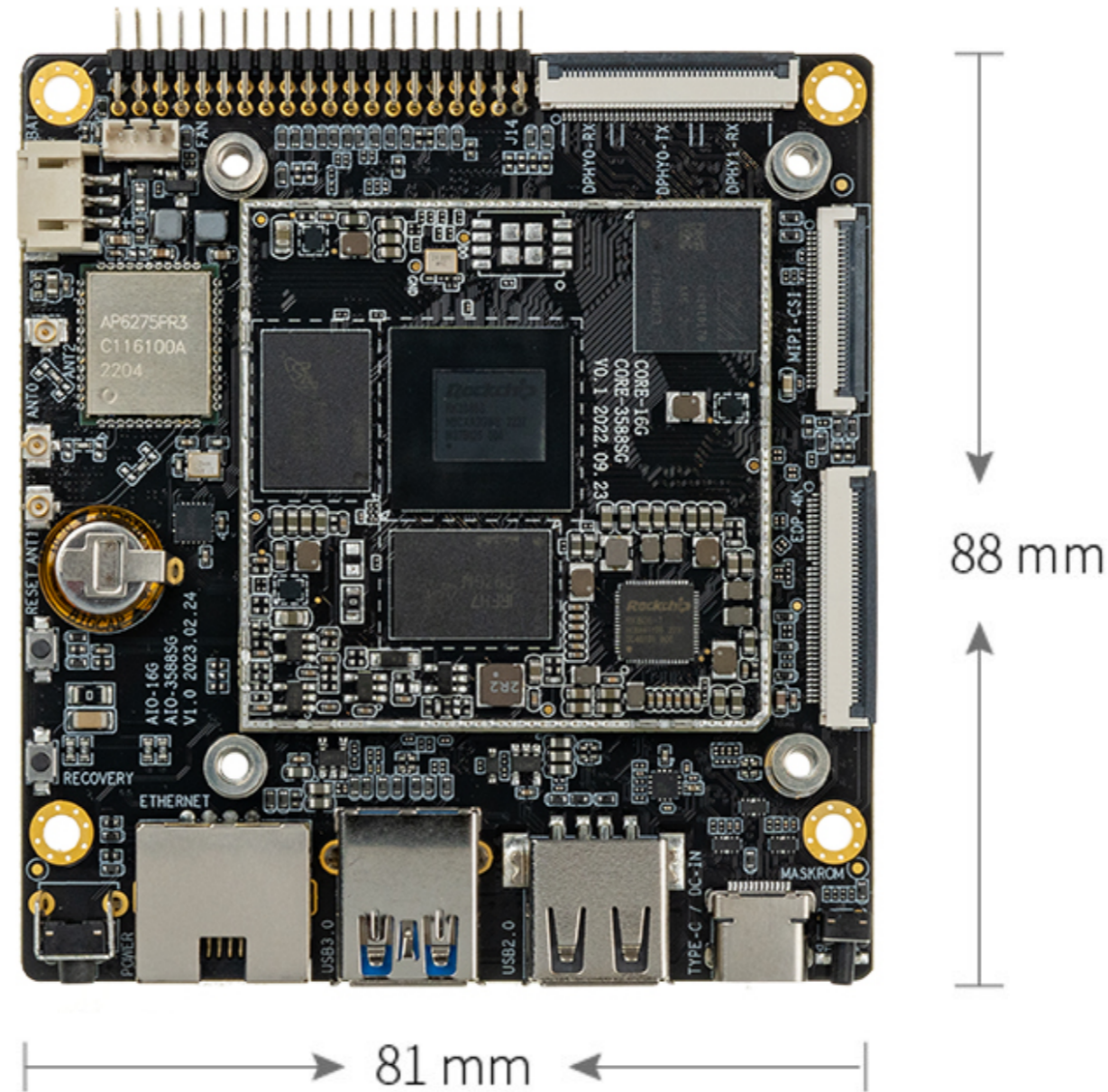
# Mainboard Interface description

**Header-2\*20P-20mm**  
CAN/UART/VCC/USB2.0/I2C/  
SPI/SARADC/SPEAKER/Debug

**FPC-40P-0.5mm**  
MIPI DPHY0-RX/MIPI DPHY0-TX/  
MIPI DPHY1-RX



# Mainboard Dimension







# Interface definition

① : Pad types: I = input, O = output, I/O = input/output (bidirectional) , G= Ground ,  
 P = power supply , DOWN = Internal pull down , UP = Internal pull UP L = Lowe Level H = High level"

PIN	CORE-3588SG(U3A) CORE-3588SG-board pin definition	Pad type	IO Pull	Function for Main BOARD(MB-G-RK3588S)	Defual function description	IO Power domain	RK3588S Pin NO.
B1	GND	G		GND			
A2	GND	G		GND			
B2	VCC_SYSIN	P		VCC_SYSIN Input	Input Voltage 4.0V +/-5%  Normal: 1.0W(4.0V/250mA) MAX: 12W(4.0V/3000mA) Min: 0.06W(4V/15mA)  建议电源 4.0V/4A 以上	4.0V	
A3	VCC_SYSIN	P					
B3	VCC_SYSIN	P					
A4	VCC_SYSIN	P					
B4	VCC_SYSIN	P					
A5	VCC_SYSIN	P					
B5	VCC_SYSIN	P					
A6	VCC_SYSIN	P					
B6	VCC_SYSIN	P					
A7	VCC_SYSIN	P					
B7	VCC_SYSIN	P					
A8	VCC_SYSIN	P					
B8	VCC_SYSIN	P					
A9	VCC_SYSIN	P					
B9	VCC_SYSIN	P					
A10	GND	G		GND			
B10	GND	G		GND			
A11	VCC_1V8_S3	P		VCC_1V8_S3	1.8V Output (Total Max:500mA)	1.8V	
B11	VCC_1V8_S3	P				1.8V	



A12	VCC_1V8_S3	P					1.8V	
B12	VCC_1V8_S3	P					1.8V	
A13	NPOR	I		RESET_L		System Reset Input ,Active L	1.8V	
B13	GND	G		GND				
A14	GND	G		GND				
A15	SDMMC_D1/PDM1_SDI2_M0/JTAG_TMS_M1/I2C3_SDA_M4/UART2_RX_M1/PWM9_M1/GPIO4_D1_u	I/O	UP	SDMMC_D1		SDMMC_Data1	VCCIO_SD_S0 1.8V/3.3V	AR2
B15	SDMMC_CLK/PDM1_CLK0_M0/TEST_CLKOUT_M0/MCU_JTAG_TMS_M0/CAN0_RX_M1/UART5_TX_M0/GPIO4_D5_d	I/O	DOWN	SDMMC_CLK		SDMMC_CLK	VCCIO_SD_S0 1.8V/3.3V	AR1
A16	SDMMC_CMD/PDM1_CLK1_M0/MCU_JTAG_TCK_M0/CAN0_TX_M1/UART5_RX_M0/PWM7_IR_M1/GPIO4_D4_u	I/O	UP	SDMMC_CMD		SDMMC_CMD	VCCIO_SD_S0 1.8V/3.3V	AU1
B16	SDMMC_D3/PDM1_SDI0_M0/JTAG_TMS_M0/I2C8_SDA_M0/UART5_RTSN_M0/PWM10_M1/GPIO4_D3_u	I/O	UP	SDMMC_D3		SDMMC_Data3	VCCIO_SD_S0 1.8V/3.3V	AT1
A17	SDMMC_DET/GPIO0_A4_u	I/O	UP	SDMMC_DET_L		TF Card Insert detect,, Active L	1.8V	AC38
B17	SDMMC_D2/PDM1_SDI1_M0/JTAG_TCK_M0/I2C8_SCL_M0/UART5_CTSN_M0/GPIO4_D2_u	I/O	UP	SDMMC_D2		SDMMC_Data2	VCCIO_SD_S0 1.8V/3.3V	AV1
B18	SDMMC_D0/PDM1_SDI3_M0/JTAG_TCK_M1/I2C3_SCL_M4/UART2_TX_M1/PWM8_M1/GPIO4_D0_u	I/O	UP	SDMMC_D0		SDMMC_Data0	VCCIO_SD_S0 1.8V/3.3V	AV2
A18	GND	G		GND				
A19	HDMI_TX0_SBDP/EDP_TX0_AUXP	I		HDMI0_TX_SBDP		HDMI0_TX_SBDP	-	BA1
B19	HDMI_TX0_SBDN/EDP_TX0_AUXN	I		HDMI0_TX_SBDN		HDMI0_TX_SBDN	-	AY1
A20	HDMI_TX0_D3P/EDP_TX0_D3P	O		HDMI0_TX3P		HDMI0_TX3P	-	BA2
B20	HDMI_TX0_D3N/EDP_TX0_D3N	O		HDMI0_TX3N		HDMI0_TX3N	-	BB2
A21	HDMI_TX0_D0P/EDP_TX0_D0P	O		HDMI0_TX0P		HDMI0_TX0P	-	BB4
B21	HDMI_TX0_D0N/EDP_TX0_D0N	O		HDMI0_TX0N		HDMI0_TX0N	-	BA4
A22	HDMI_TX0_D1P/EDP_TX0_D1P	O		HDMI0_TX1P		HDMI0_TX1P	-	BA5
B22	HDMI_TX0_D1N/EDP_TX0_D1N	O		HDMI0_TX1N		HDMI0_TX1N	-	BB5
A23	HDMI_TX0_D2P/EDP_TX0_D2P	O		HDMI0_TX2P		HDMI0_TX2P	-	BB7



B23	HDMI_TX0_D2N/EDP_TX0_D2N	O		HDMI0_TX2N	HDMI0_TX2N	-	BA7
A24	GND	G		GND			
B24	GND	G		GND			
A25	USB20_HOST0_DM	I/O		USB20_HOST0_DM	USB20_HOST0_DM	-	AV6
B25	USB20_HOST0_DP	I/O		USB20_HOST0_DP	USB20_HOST0_DP	-	AW6
A26	USB20_HOST1_DM	I/O		USB20_HOST1_DM	USB20_HOST1_DM	-	AW7
B26	USB20_HOST1_DP	I/O		USB20_HOST1_DP	USB20_HOST1_DP	-	AV7
A27	TYPEC1_USB20_OTG_DM	I/O		TYPEC0_OTG_DM	TYPEC0_OTG_DM	-	AY10
B27	TYPEC0_USB20_OTG_DP	I/O		TYPEC0_OTG_DP	TYPEC0_OTG_DP	-	AY11
A28	TYPEC0_SSRX1P/DP0_TX0P	I		TYPEC0_SSRX1P	TYPEC0_SSRX1P	-	BB10
B28	TYPEC0_SSRX1N/DP0_TX0N	I		TYPEC0_SSRX1N	TYPEC0_SSRX1N	-	BA10
A29	TYPEC0_SSTX1P/DP0_TX1P	O		TYPEC0_SSTX1P	TYPEC0_SSTX1P	-	BB11
B29	TYPEC0_SSTX1N/DP0_TX1N	O		TYPEC0_SSTX1N	TYPEC0_SSTX1N	-	BA11
A30	TYPEC0_SSRX2P/DP0_TX2P	I		TYPEC0_SSRX2P	TYPEC0_SSRX2P	-	BB13
B30	TYPEC0_SSRX2N/DP0_TX2N	I		TYPEC0_SSRX2N	TYPEC0_SSRX2N	-	BA13
A31	TYPEC0_SSTX2P/DP0_TX3P	O		TYPEC0_SSTX2P	TYPEC0_SSTX2P	-	BB14
B31	TYPEC0_SSTX2N/DP0_TX3N	O		TYPEC0_SSTX2N	TYPEC0_SSTX2N	-	BA14
A32	TYPEC0_SBU2/DP0_AUXN	O		TYPEC0_SBU2	TYPEC0_SBU2	-	BB8
B32	TYPEC0_SBU1/DP0_AUXP	O		TYPEC0_SBU1	TYPEC0_SBU1	-	BA8
A33	GND	G		GND			
B33	GND	G		GND			
A34	TYPEC0_USB20_OTG_ID	I		NC	NC (TYPEC0_USB20_OTG_ID, Active L)	3.3V	AW10
B34	TYPEC0_USB20_VBUSDET	I		TYPEC0_OTG_VBUSDET	VBUS Detect Input ,Active H	3.3V	AV10
A35	GND	G		GND			



B35	GND	G		GND			
A36	MIPI_DPHY1_TX_D0N/MIPI_CPHY1_TX_TRIO0_A	O		MIPI_DPHY1_TX_D0N	MIPI_DPHY1_TX_D0N	-	BA16
B36	MIPI_DPHY1_TX_D0P/MIPI_CPHY1_TX_TRIO0_B	O		MIPI_DPHY1_TX_D0P	MIPI_DPHY1_TX_D0P	-	BB16
A37	MIPI_DPHY1_TX_D1N/MIPI_CPHY1_TX_TRIO0_C	O		MIPI_DPHY1_TX_D1N	MIPI_DPHY1_TX_D1N	-	BB17
B37	MIPI_DPHY1_TX_D1P/MIPI_CPHY1_TX_TRIO1_A	O		MIPI_DPHY1_TX_D1P	MIPI_DPHY1_TX_D1P	-	BA17
A38	MIPI_DPHY1_TX_CLKN/MIPI_CPHY1_TX_TRIO1_B	O		MIPI_DPHY1_TX_CLKN	MIPI_DPHY1_TX_CLKN	-	BA19
B38	MIPI_DPHY1_TX_CLKP/MIPI_CPHY1_TX_TRIO1_C	O		MIPI_DPHY1_TX_CLKP	MIPI_DPHY1_TX_CLKP	-	BB19
A39	MIPI_DPHY1_TX_D2N/MIPI_CPHY1_TX_TRIO2_A	O		MIPI_DPHY1_TX_D2N	MIPI_DPHY1_TX_D2N	-	BB20
B39	MIPI_DPHY1_TX_D2P/MIPI_CPHY1_TX_TRIO2_B	O		MIPI_DPHY1_TX_D2P	MIPI_DPHY1_TX_D2P	-	BA20
A40	MIPI_DPHY1_TX_D3N/MIPI_CPHY1_TX_TRIO2_C	O		MIPI_DPHY1_TX_D3N	MIPI_DPHY1_TX_D3N	-	BA22
B40	MIPI_DPHY1_TX_D3P/NO_USE	O		MIPI_DPHY1_TX_D3P	MIPI_DPHY1_TX_D3P	-	BB22
A41	GND	G		GND			
B41	GND	G		GND			
A42	MIPI_DPHY1_RX_D0N/MIPI_CPHY1_RX_TRIO0_A	O		MIPI_DPHY1_RX_D0N/MIPI_CPHY1_RX_TRIO0_A	MIPI_DPHY1_RX_D0N	-	BB23
B42	MIPI_DPHY1_RX_D0P/MIPI_CPHY1_RX_TRIO0_B	O		MIPI_DPHY1_RX_D0P/MIPI_CPHY1_RX_TRIO0_B	MIPI_DPHY1_RX_D0P	-	BA23
A43	MIPI_DPHY1_RX_D1N/MIPI_CPHY1_RX_TRIO0_C	O		MIPI_DPHY1_RX_D1N/MIPI_CPHY1_RX_TRIO0_C	MIPI_DPHY1_RX_D1N	-	BA25
B43	MIPI_DPHY1_RX_D1P/MIPI_CPHY1_RX_TRIO1_A	O		MIPI_DPHY1_RX_D1P/MIPI_CPHY1_RX_TRIO1_A	MIPI_DPHY1_RX_D1P	-	BB25
A44	MIPI_DPHY1_RX_CLKN/MIPI_CPHY1_RX_TRIO1_B	O		MIPI_DPHY1_RX_CLKN/MIPI_CPHY1_RX_TRIO1_B	MIPI_DPHY1_RX_CLKN	-	BB26
B44	MIPI_DPHY1_RX_CLKP/MIPI_CPHY1_RX_TRIO1_C	O		MIPI_DPHY1_RX_CLKP/MIPI_CPHY1_RX_TRIO1_C	MIPI_DPHY1_RX_CLKP	-	BA26
A45	MIPI_DPHY1_RX_D2N/MIPI_CPHY1_RX_TRIO2_A	O		MIPI_DPHY1_RX_D2N/MIPI_CPHY1_RX_TRIO2_A	MIPI_DPHY1_RX_D2N	-	BA28
B45	MIPI_DPHY1_RX_D2P/MIPI_CPHY1_RX_TRIO2_B	O		MIPI_DPHY1_RX_D2P/MIPI_CPHY1_RX_TRIO2_B	MIPI_DPHY1_RX_D2P	-	BB28



A46	MIPI_DPHY1_RX_D3N/MIPI_CPHY1_RX_TRIO2_C	O		MIPI_DPHY1_RX_D3N/MIPI_CPHY1_RX_TRIO2_C	MIPI_DPHY1_RX_D3N	-	BB29
B46	MIPI_DPHY1_RX_D3P/NO_USE	O		MIPI_DPHY1_RX_D3P	MIPI_DPHY1_RX_D3P	-	BA29
*VCCIO_SD_S0 =3.3/1.8V Auto ,Default: 3.3V(SD2.0), 1.8V(SD3.0) Auto							
PIN	CORE-3588SG(U3B) CORE-3588SG-board pin definition	Pad type	IO Pull	Function for Main BOARD(MB-G-RK3588S)	Defual function description	IO Power domain	RK3588S Pin NO.
C1	GND	G		GND			
C2	VCC_SYSIN	P		VCC_SYSIN	Input Voltage 4.0V +/-5%	4.0V	
D1	GND	G		GND			
D2	GND	G		GND			
E1	GND	G		GND			
E2	GND	G		GND			
F1	GND	G		GND			
F2	GND	G		GND			
G1	GND	G		GND			
G2	GND	G		GND			
H1	GND	G		GND			
H2	GND	G		GND			
J1	VCCA	P		VCCA	Power supply of PMIC Power on circuit Input	4.0V/5.0V	
J2	VCCA	P		VCCA			
K1	GND	G		GND			
K2	GND	G		GND			
L1	GND	G		GND			
L2	GND	G		GND			
M1	VCC_3V3_S3	P		VCC_3V3_S3	3.3V Output ( Total Max:500mA)	3.3V	
M2	VCC_3V3_S3	P		VCC_3V3_S3		3.3V	



N1	VCC_3V3_S3	P		VCC_3V3_S3		3.3V	
N2	VCC_3V3_S3	P		VCC_3V3_S3		3.3V	
P1	GND	G		GND			
P2	GND	G		GND			
R1	VCCA_1V8_S0	P		VCCA_1V8_S0	1.8V Output (Total Max:100mA)	1.8V	
R2	VCCA_1V8_S0	P		VCCA_1V8_S0		1.8V	
T1	GND	G		GND			
T2	GND	G		GND			
U1	VCCA_3V3_S0	P		VCCA_3V3_S0	3.3V Output (Total Max:100mA)	3.3V	
U2	VCCA_3V3_S0	P		VCCA_3V3_S0		3.3V	
V1	GND	G		GND			
V2	GND	G		GND			
W1	GMAC1_PPSCCLK/UART7_RX_M1/SPI1_CLK_M1/GPIO3_C1_d	I/O	DOWN	GPIO3_C1_D	GPIO3_C1_D	VCCIO5 (1.8/3.3V)	AW38
W2	PWRON_L	O		PWRON_L	Power Key Input, Active L	VCCA	
Y1	GND	G		GND			
Y2	GND	G		GND			
AA1	GND	G		GND			
AA2	GND	G		GND			
AB1	GND	G		GND			
AB2	PMIC_EXT_EN_OUT	I		PMIC_EXT_EN_OUT	RK806 EXT_EN Output, Active H	VCCA	
AC1	GND	G		GND			
AC2	CIF_D9/FSPI_CS1N_M2/CAN2_TX_M0/UART5_RX_M1/SPI3_CS1_M3/GPIO3_C5_u	I/O	UP	UART5_RX_M1	UART5_RX_M1	VCCIO5 (1.8/3.3V)	AV34
AD1	GND	G		GND			
AD2	CIF_D8/FSPI_CS0N_M2/CAN2_RX_M0/UART5_TX_M1/SPI3_CS0_M3/GPIO3_C4_u	I/O	UP	UART5_TX_M1	UART5_TX_M1	VCCIO5	AU34



							(1.8/3.3V)	
AE1	GND	G		GND				
AE2	HDMI_TX0_HPD_M1/MCU_JTAG_TCK_M1/UART9_RX_M2/SPI0_CS0_M3/GPIO3_D4_d	I/O	DOWN	UART9_RX_M2_BT	UART9_RX_M2_BT		VCCIO5 (1.8/3.3V)	AV31
AF1	CIF_D12/PCIE20X1_2_WAKEN_M0/HDMI_TX0_SDA_M2/I2C5_SDA_M0/UART4_RX_M1/PWM8_M2/SPI3_CLK_M3/GPIO3_D0_u	I/O	UP	PCIE20X1_2_WAKEN_M0	PCIE20x1_2_WAKEn_M0		VCCIO5 (1.8/3.3V)	AW31
AF2	CIF_D15/I2C7_SDA_M2/UART9_CTSN_M2/PWM10_M2/SPI0_CLK_M3/GPIO3_D3_d	I/O	DOWN	UART9_CTSN_M2_BT	UART9_CTSN_M2_BT		VCCIO5 (1.8/3.3V)	AY31
AG1	CIF_D14/I2C7_SCL_M2/UART9_RTSN_M2/SPI0_MOSI_M3/GPIO3_D2_d	I/O	DOWN	UART9_RTSN_M2_BT	UART9_RTSN_M2_BT		VCCIO5 (1.8/3.3V)	AY30
AG2	MCU_JTAG_TMS_M1/UART9_TX_M2/PWM11_IR_M3/SPI0_CS1_M3/GPIO3_D5_d	I/O	DOWN	UART9_TX_M2_BT	UART9_TX_M2_BT		VCCIO5 (1.8/3.3V)	AW30
AH1	CIF_D11/PCIE20X1_2_CLKREQN_M0/HDMI_TX0_SCL_M2/I2C5_SCL_M0/SPI3_MOSI_M3/GPIO3_C7_u	I/O	UP	PCIE20X1_2_CLKREQN_M0	PCIE20X1_2_CLKREQN_M0		VCCIO5 (1.8/3.3V)	AU30
AH2	CIF_D10/SPI3_MISO_M3/GPIO3_C6_u	I/O	UP	SDMMC_PWREN	SDMMC_PWREN		VCCIO5 (1.8/3.3V)	AV30
AJ1	CIF_D13/PCIE20X1_2_PERSTN_M0/UART4_TX_M1/PWM9_M2/SPI0_MISO_M3/GPIO3_D1_d	I/O	DOWN	PCIE20X1_2_PERSTN_M0	PCIE20X1_2_PERSTN_M0		VCCIO5 (1.8/3.3V)	AY27
AJ2	CIF_CLKOUT/BT1120_D10/I2S1_SDO3_M0/DP0_HPDIN_M0/SPDIF0_TX_M1/DDRPHY_CH3_DTB0/UART9_TX_M1/PWM11_IR_M1/GPIO4_B4_u	I/O	UP	I2S1_SDO3_M0	I2S1_SDO3_M0		3.3V	AV27
AK1	CIF_D7/BT1120_D7/I2S1_SDI2_M0/DDRPHY_CH1_DTB3/I2C5_SDA_M2/SPI2_CS0_M1/GPIO4_A7_d	I/O	DOWN	I2S1_SDI2_M0	I2S1_SDI2_M0		3.3V	AW26
AK2	BT1120_D15/SPDIF1_TX_M2/PCIE20X1_2_PERSTN_M1/HDMI_TX0_CEC_M0/I2C8_SDA_M3/PWM6_M1/SPI3_CS1_M1/GPIO4_C1_d	I/O	DOWN	CHRG_OK_H_EC	CHRG_OK_H_EC		3.3V	AY26
AL1	AL1	G		GND	GND			
AL2	CIF_D2/BT1120_D2/I2S1_LRCK_M0/PCIE20X1_1_PERSTN_M1/DDRPHY_CH0_DTB2/SPI0_CLK_M1/GPIO4_A2_d	I/O	DOWN	I2S1_LRCK_M0	I2S1_LRCK_M0		3.3V	AV26
AM1	BT1120_D14/PCIE20X1_2_WAKEN_M1/HDMI_TX0_SDA_M0/I2C8_SCL_M3/SPI3_CS0_M1/GPIO4_C0_u	I/O	UP	CHARGE_OTGEN_H_EC	CHARGE_OTGEN_H_EC		3.3V	AW23
AM2	CIF_VSYNC/BT1120_D9/I2S1_SDO2_M0/PCIE20X1_2_BUTTON_RSTN/DDRPHY_CH2_DTB3/I2C7_SDA_M3/UART8_CTSN_M0/PWM15_IR_M1/CAN1_TX_M1/GPIO4_B3_u	I/O	UP	PCA9555_INT	PCA9555_INT to Core board		3.3V	AV23



AN1	BT1120_D13/PCIE20X1_2_CLKREQN_M1/HDMI_TX0_SCL_M0/DDRPHY_CH3_DTB3/I2C5_SDA_M1/SPI3_CLK_M1/GPIO4_B7_u	I/O	UP	LCD_PWREN	LCD Power EN Output, Active H	3.3V	AV22
AN2	BT1120_D12/SATA0_ACT_LED_M0/DDRPHY_CH3_DTB2/I2C5_SCL_M1/PWM13_M1/SPI3_MOSI_M1/GPIO4_B6_d	I/O	DOWN	GAUGE_ALRT_L_EC	GAUGE_ALRT to Core board, Active L	3.3V	AW22
AP1	MIPI_CAMERA0_CLK_M0/SPDIF1_TX_M1/I2S1_SDO0_M0/SATA2_ACT_LED_M0/DDRPHY_CH2_DTB1/I2C6_SCL_M3/UART8_RX_M0/SPI0_CS1_M1/GPIO4_B1_u	I/O	UP	I2C6_SCL_M3	I2C6_SCL_M3	3.3V	AU22
AP2	CIF_CLKIN/BT1120_CLKOUT/I2S1_SDI3_M0/DDRPHY_CH2_DTB0/I2C6_SDA_M3/UART8_TX_M0/SPI2_CS1_M1/GPIO4_B0_d	I/O	DOWN	I2C6_SDA_M3	I2C6_SDA_M3	3.3V	AW27
AR1	CIF_HREF/BT1120_D8/I2S1_SDO1_M0/PCIE20X1_1_BUTTON_RSTN/DDRPHY_CH2_DTB2/I2C7_SCL_M3/UART8_RTSN_M0/PWM14_M1/SPI0_CS0_M1/CAN1_RX_M1/GPIO4_B2_u	I/O	UP	EDP_BL_PWM14_M1	BL_PWM14_M1 Output	3.3V	AT15
AR2	BT1120_D11/DDRPHY_CH3_DTB1/UART9_RX_M1/PWM12_M1/SPI3_MISO_M1/GPIO4_B5_d	I/O	DOWN	USB_HOST_PWREN_H	USB HOST power EN, Active H	3.3V	AU23
AT1	CIF_D4/BT1120_D4/DDRPHY_CH1_DTB_0/I2C3_SCL_M2/UART0_RX_M2/SPI2_MISO_M1/GPIO4_A4_d	I/O	DOWN	UART0_RX_M2	UART0_RX_M2	3.3V	AW19
AT2	CIF_D3/BT1120_D3/I2S1_SCLK_M0/DDRPHY_CH0_DTB_3/UART0_TX_M2/GPIO4_A3_d	I/O	DOWN	UART0_TX_M2	UART0_TX_M2	3.3V	AY19
AU1	CIF_D6/BT1120_D6/I2S1_SDI1_M0/DDRPHY_CH1_DTB2/I2C5_SCL_M2/UART3_RX_M2/SPI2_CLK_M1/GPIO4_A6_d	I/O	DOWN	UART3_RX_M2	UART3_RX_M2	3.3V	AV18
AU2	CIF_D5/BT1120_D5/I2S1_SDI0_M0/DDRPHY_CH1_DTB_1/I2C3_SDA_M2/UART3_TX_M2/SPI2_MOSI_M1/GPIO4_A5_d	I/O	DOWN	UART3_TX_M2	UART3_TX_M2	3.3V	AU15
AV1	CIF_D0/BT1120_D0/I2S1_MCLK_M0/PCIE20X1_1_CLKREQN_M1/DDRPHY_CH0_DTB0/UART9_RTSN_M1/SPI0_MISO_M1/GPIO4_A0_d	I/O	DOWN	GPIO4_A0_d	GPIO4_A0	3.3V	AV19
AV2	CIF_D1/BT1120_D1/I2S1_SCLK_M0/PCIE20X1_1_WAKEN_M1/DDRPHY_CH0_DTB_1/UART9_CTSN_M1/SPI0_MOSI_M1/GPIO4_A1_d	I/O	DOWN	I2S1_SCLK_M0	I2S1_SCLK_M0	3.3V	AW18
AW1	GND	G		GND			
AW2	VDC	P		VDC	VDC Input, Active H--上电开机信号输入, 不用此功能可 NC	1.0~4.0V	
AY1	GND	G		GND			
AY2	SARADC_IN4	I		SARADC_VIN4_HP_HOOK	ADC4 Input	1.8V	AY15
BA1	SARADC_VIN0_BOOT	I		SARADC_VIN0_BOOT	ADC0 Input (Boot Mode)	1.8V	AW15
BA2	SARADC_VIN1_KEY/RECOVERY	I		SARADC_VIN1_KEY/RECOVERY (Core board Pull up resistance	ADC1 Input (RECOVERY_KEY)	1.8V	AY13





				10K)			
BB1	SARADC_VIN3	I		SARADC_VIN3	ADC3 Input	1.8V	AV13
BB2	SARADC_VIN2	I		SARADC_VIN2	ADC2 Input	1.8V	
BC1	GND	G		GND			
BC2	GND	G		GND			
BD1	GND	G		GND			
BD2	GND	G		GND			
BE1	GND	G		GND			
BE2	GND	G		GND			
BF1	GND	G		GND			
BF2	CORE-ID	P		NC (Core board Pull up resistance 10K)	NC	3.3V	
BG1	GND	G		GND			
BG2	GND	G		GND			
BH1	GND	G		GND			
BH2	GND	G		GND			
BJ1	GND	G		GND			
BJ2	GND	G		GND			

PIN	CORE-3588SG(U3C) CORE-3588SG-board pin definition	Pad type	IO Pull	Function for Main BOARD(MB-G-RK3588S)	Defual function description	IO Power domain	RK3588S Pin NO.
A47	MIPI_DPHY0_TX_D0N/MIPI_CPHY0_TX_TRIO0_A	O		MIPI_DPHY0_TX_D0N/MIPI_CPHY0_TX_TRIO0_A	MIPI_DPHY0_TX_D0N		BA31
B47	MIPI_DPHY0_TX_D0P/MIPI_CPHY0_TX_TRIO0_B	O		MIPI_DPHY0_TX_D0P/MIPI_CPHY0_TX_TRIO0_B	MIPI_DPHY0_TX_D0P		BB31
A48	MIPI_DPHY0_TX_D1N/MIPI_CPHY0_TX_TRIO0_C	O		MIPI_DPHY0_TX_D1N/MIPI_CPHY0_TX_TRIO0_C	MIPI_DPHY0_TX_D1N		BB32



B48	MIPI_DPHY0_TX_D1P/MIPI_CPHY0_TX_TRIO1_A	O		MIPI_DPHY0_TX_D1P/MIPI_CPHY0_TX_TRIO1_A	MIPI_DPHY0_TX_D1P		BA32
A49	GND	G		GND	GND		
B49	GND	G		GND	GND		
C48	MIPI_DPHY0_TX_CLKN/MIPI_CPHY0_TX_TRIO1_B	O		MIPI_DPHY0_TX_CLKN/MIPI_CPHY0_TX_TRIO1_B	MIPI_DPHY0_TX_CLKN		BA34
C49	MIPI_DPHY0_TX_CLKP/MIPI_CPHY0_TX_TRIO1_C	O		MIPI_DPHY0_TX_CLKP/MIPI_CPHY0_TX_TRIO1_C	MIPI_DPHY0_TX_CLKP		BB34
D48	MIPI_DPHY0_TX_D2N/MIPI_CPHY0_TX_TRIO2_A	O		MIPI_DPHY0_TX_D2N/MIPI_CPHY0_TX_TRIO2_A	MIPI_DPHY0_TX_D2N		BB35
D49	MIPI_DPHY0_TX_D2P/MIPI_CPHY0_TX_TRIO2_B	O		MIPI_DPHY0_TX_D2P/MIPI_CPHY0_TX_TRIO2_B	MIPI_DPHY0_TX_D2P		BA35
E48	MIPI_DPHY0_TX_D3N/MIPI_CPHY0_TX_TRIO2_C	O		MIPI_DPHY0_TX_D3N/MIPI_CPHY0_TX_TRIO2_C	MIPI_DPHY0_TX_D3N		BA37
E49	MIPI_DPHY0_TX_D3P/NO_USE	O		MIPI_DPHY0_TX_D3P	MIPI_DPHY0_TX_D3P		BB37
F48	GND	G		GND	GND		
F49	GND	G		GND	GND		
G48	MIPI_DPHY0_RX_D0N/MIPI_CPHY0_RX_TRIO0_A	O		MIPI_DPHY0_RX_D0N/MIPI_CPHY0_RX_TRIO0_A	MIPI_DPHY0_RX_D0N		BB38
G49	MIPI_DPHY0_RX_D0P/MIPI_CPHY0_RX_TRIO0_B	O		MIPI_DPHY0_RX_D0P/MIPI_CPHY0_RX_TRIO0_B	MIPI_DPHY0_RX_D0P		BA38
H48	MIPI_DPHY0_RX_D1N/MIPI_CPHY0_RX_TRIO0_C	O		MIPI_DPHY0_RX_D1N/MIPI_CPHY0_RX_TRIO0_C	MIPI_DPHY0_RX_D1N		AY40
H49	MIPI_DPHY0_RX_D1P/MIPI_CPHY0_RX_TRIO1_A	O		MIPI_DPHY0_RX_D1P/MIPI_CPHY0_RX_TRIO1_A	MIPI_DPHY0_RX_D1P		BA40
J48	MIPI_DPHY0_RX_CLKN/MIPI_CPHY0_RX_TRIO1_B	O		MIPI_DPHY0_RX_CLKN/MIPI_CPHY0_RX_TRIO1_B	MIPI_DPHY0_RX_CLKN		BA41
J49	MIPI_DPHY0_RX_CLKP/MIPI_CPHY0_RX_TRIO1_C	O		MIPI_DPHY0_RX_CLKP/MIPI_CPHY0_RX_TRIO1_C	MIPI_DPHY0_RX_CLKP		BB41
K48	MIPI_DPHY0_RX_D2N/MIPI_CPHY0_RX_Trio2_A	O		MIPI_DPHY0_RX_D2N/MIPI_CPHY0_RX_TRIO2_A	MIPI_DPHY0_RX_D2N		BA42



K49	MIPI_DPHY0_RX_D2P/MIPI_CPHY0_RX_TRIO2_B	O		MIPI_DPHY0_RX_D2P/MIPI_CPHY0_RX_TRIO2_B	MIPI_DPHY0_RX_D2P		AY42
L48	MIPI_DPHY0_RX_D3N/MIPI_CPHY0_RX_TRIO2_C	O		MIPI_DPHY0_RX_D3N/MIPI_CPHY0_RX_TRIO2_C	MIPI_DPHY0_RX_D3N		AW42
L49	MIPI_DPHY0_RX_D3P/NO_USE	O		MIPI_DPHY0_RX_D3P	MIPI_DPHY0_RX_D3P		AW41
M49	GND	G		GND	GND		
N48	MIPI_CSI0_CLK1P	I		MIPI_CSI0_RX_CLK1P	MIPI_CSI0_RX_CLK1P		AU41
N49	MIPI_CSI0_CLK1N	I		MIPI_CSI0_RX_CLK1N	MIPI_CSI0_RX_CLK1N		AU42
P48	MIPI_CSI0_D2N	I		MIPI_CSI0_RX_D2N	MIPI_CSI0_RX_D2N		AT42
P49	MIPI_CSI0_D2P	I		MIPI_CSI0_RX_D2P	MIPI_CSI0_RX_D2P		AT41
R48	MIPI_CSI0_D3N	I		MIPI_CSI0_RX_D3N	MIPI_CSI0_RX_D3N		AP41
R49	MIPI_CSI0_D3P	I		MIPI_CSI0_RX_D3P	MIPI_CSI0_RX_D3P		AP42
T48	MIPI_CSI0_CLK0P	I		MIPI_CSI0_RX_CLK0P	MIPI_CSI0_RX_CLK0P		AN42
T49	MIPI_CSI0_CLK0N	I		MIPI_CSI0_RX_CLK0N	MIPI_CSI0_RX_CLK0N		AN41
U48	MIPI_CSI0_D0N	I		MIPI_CSI0_RX_D0N	MIPI_CSI0_RX_D0N		AL41
U49	MIPI_CSI0_D0P	I		MIPI_CSI0_RX_D0P	MIPI_CSI0_RX_D0P		AL42
V48	MIPI_CSI0_D1N	I		MIPI_CSI0_RX_D1N	MIPI_CSI0_RX_D1N		AK42
V49	MIPI_CSI0_D1P	I		MIPI_CSI0_RX_D1P	MIPI_CSI0_RX_D1P		AK41
W49	GND	G		GND	GND		
W48	PDM0_CLK1_M1/PWM2_M0/UART0_RX_M0/I2C4_SDA_M2/DP0_HPDIN_M1/GPIO0_C4_d	I/O	DOWN	CC_INT0_L	CC_INT0 Input ,Active L	1.8V	AL38
Y48	ETH1_REFCLKO_25M/MIPI_CAMERA1_CLK_M1/I2C4_SCL_M0/GPIO3_A6_d	I/O	DOWN	MIPI_CAMERA1_CLK_M1	MIPI_CAMERA1_CLK Output	VCCIO5 (1.8/3.3V)	AV37
Y49	GMAC1_PPSTRIG/I2C3_SDA_M1/UART7_TX_M1/SPI1_MISO_M1/GPIO3_C0_d	I/O	DOWN	MIPI_CAM1_PDN_L	MIPI_CAM1_PDN	VCCIO5 (1.8/3.3V)	AR36
AA48	I2S1_SDO3_M1/CPU_BIG1_AV5/I2C1_SDA_M2/CAN2_TX_M1/HDMI_TX0_SCL_M1/SPI3_CS1_M2/SATA_MP_SWITCH/GPIO0_D5_u	I/O	UP	CAN2_TX_M1	CAN2_TX_M1	1.8V	AM39
AA49	I2S1_SDO2_M1/PDM0_SDI2_M1/PWM3_IR_M0/I2C1_SCL_M2/CAN2_RX_M1/HDMI_TX0_SDA_M1/SPI3_CS0_M2/SATA_CPDET/GPIO0_D4_u	I/O	UP	CAN2_RX_M1	CAN2_RX_M1	1.8V	AL39



AB48	I2C2_SCL_M0 (VDD_NPU)	I/O	DOWN	I2C2_SCL_M0 (Core board Pull up resistance 2.2K)	I2C2_SCL_M0	1.8V	AK39
AB49	I2C2_SDA_M0 (VDD_NPU)	I/O	DOWN	I2C2_SDA_M0 (Core board Pull up resistance 2.2K)	I2C2_SDA_M0	1.8V	AM40
AC48	I2S1_MCLK_M1/JTAG_TCK_M2/I2C1_SCL_M0/UART2_TX_M0/PCIE20X1_1_CLKREQN_M0/GPIO0_B5_d	I/O	DOWN	UART2_TX_M0	UART2_TX_M0 (For System Debug)	1.8V	AH39
AC49	I2S1_SCLK_M1/JTAG_TMS_M2/I2C1_SDA_M0/UART2_RX_M0/PCIE20X1_1_WAKEN_M0/GPIO0_B6_d	I/O	DOWN	UART2_RX_M0	UART2_RX_M0 (For System Debug)	1.8V	AH40
AD48	I2S1_SDI1_M1/NPU_AV5/UART0_RTSN/PWM5_M1/SPI0_CLK_M0/SATA_CP_POD/GPIO0_C6_u	I/O	UP	HOST_WAKE_BT_H	HOST_WAKE_BT_H	1.8V	AH42
AD49	I2S1_SDI2_M1/PDM0_SDI0_M1/I2C6_SDA_M0/UART1_RTSN_M2/PWM6_M0/SPI0_MISO_M0/GPIO0_C7_d	I/O	DOWN	WIFI_REG_ON_H	WIFI_EN Output, Active H	1.8V	AL40
AE48	I2S1_SDI0_M1/GPU_AV5/UART0_TX_M0/I2C4_SCL_M2/PWM4_M0/GPIO0_C5_u	I/O	UP	BT_WAKE_HOST_H	BT_WAKE_HOST_H	1.8V	AG38
AE49	I2S1_SDI3_M1/PDM0_SDI1_M1/I2C6_SCL_M0/UART1_CTSN_M2/PWM7_IR_M0/SPI3_MISO_M2/GPIO0_D0_d	I/O	DOWN	BT_REG_ON_H	BT EN Output,, Active H	1.8V	AG39
AF48	I2C0_SCL_M2 (VDD_CPU_BIG0/BIG1)	I/O	UP	I2C0_SCL_M2 (Core board Pull up resistance 2.2K)	I2C0_SCL_M2	1.8V	AH41
AF49	I2C0_SDA_M2 (VDD_CPU_BIG0/BIG1)	I/O	UP	I2C0_SDA_M2 (Core board Pull up resistance 2.2K)	I2C0_SDA_M2	1.8V	AG41
AG48	CLK32K_IN/CLK32K_OUT0/GPIO0_B2_u	I/O	UP	RTC_32K_IN	32.768KHz Input	1.8V	AD38
AG49	LITCPU_AV5/SPI3_CLK_M2/GPIO0_D3_u	I/O	UP	GMAC1_INT/PMEB	GMAC1_INT/PMEB	1.8V	AG37
AH48	GND	G		GND			
AH49	GND	G		GND			
AJ48	GMAC1_PTP_REF_CLK/I2C3_SCL_M1/SPI1_MOSI_M1/GPIO3_B7_d	I/O	DOWN	GPIO3_B7_d	GPIO3_B7	VCCIO5 (1.8/3.3V)	AY34
AJ49	GMAC1_MDC/MIPI_TE0/I2C8_SCL_M4/UART7_RTSN_M1/PWM14_M0/SPI1_CS0_M1/GPIO3_C2_d	O	DOWN	GMAC1_MDC	GMAC1_MDC	VCCIO5 (1.8/3.3V)	AV40
AK48	GMAC1_TXD0/I2S2_SDO_M1/UART2_RTSN/GPIO3_B3_u	I/O	UP	GMAC1_TXD0 (Core board Pull up resistance 0R)	GMAC1_TXD0 (Core board Pull up resistance 0R)	VCCIO5 (1.8/3.3V)	AW35



AK49	GMAC1_TXD1/I2S2_MCLK_M1/UART2_CTSN/GPIO3_B4_u	I/O	UP	GMAC1_TXD1 (Core board Pull up resistance 0R)	GMAC1_TXD1 (Core board Pull up resistance 0R)	VCCIO5 (1.8/3.3V)	AV35
AL48	GMAC1_RXCLK/SDIO_CLK_M1/MIPI_CAMERA0_CLK_M1/FSPI_CLK_M2/I2C4_SDA_M0/UART8_CTSN_M1/GPIO3_A5_d	I/O	DOWN	GMAC1_RXCLK	GMAC1_RXCLK	VCCIO5 (1.8/3.3V)	AV38
AL49	GMAC1_MCLKINOUT/I2S2_LRCK_M1/CAN1_TX_M0/UART3_RX_M1/PWM13_M0/GPIO3_B6_d	I/O	DOWN	GMAC1_MCLKINOUT	GMAC1_MCLK IN/OUT	VCCIO5 (1.8/3.3V)	AW37
AM48	GMAC1_RXDV_CRS/MIPI_CAMERA4_CLK_M1/UART2_TX_M2/PWM2_M1/GPIO3_B1_d	I/O	DOWN	GMAC1_RXDV_CRS	GMAC1_RXDV_CRS	VCCIO5 (1.8/3.3V)	AV39
AM49	GMAC1_TXEN/I2S2_SCLK_M1/CAN1_RX_M0/UART3_TX_M1/PWM12_M0/GPIO3_B5_u	I/O	UP	GMAC1_TXEN	GMAC1_TXEN	VCCIO5 (1.8/3.3V)	AY35
AN48	GMAC1_RXD2/SDIO_D2_M1/I2S3_LRCK/AUDDSM_LP/FSPI_D2_M2/UART8_TX_M1/SPI4_CLK_M1/GPIO3_A2_u	I/O	UP	GMAC1_RXD2	GMAC1_RXD2	VCCIO5 (1.8/3.3V)	AT38
AN49	GMAC1_RXD0/MIPI_CAMERA2_CLK_M1/PWM8_M0/GPIO3_A7_u	I/O	UP	GMAC1_RXD0	GMAC1_RXD0	VCCIO5 (1.8/3.3V)	AT37
AP48	GMAC1_TXCLK/SDIO_CMD_M1/I2S3_SDI/AUDDSM_RP/UART8_RTSN_M1/SPI4_CS1_M1/GPIO3_A4_d	I/O	DOWN	GMAC1_TXCLK	GMAC1_TXCLK	VCCIO5 (1.8/3.3V)	AT39
AP49	GMAC1_TXER/I2S2_SDI_M1/UART2_RX_M2/PWM3_IR_M1/GPIO3_B2_d	I/O	DOWN	GPIO3_B2_d	GPIO3_B2	VCCIO5 (1.8/3.3V)	AW34
AR48	GMAC1_RXD1/MIPI_CAMERA3_CLK_M1/PWM9_M0/GPIO3_B0_u	I/O	UP	GMAC1_RXD1	GMAC1_RXD1	VCCIO5 (1.8/3.3V)	AR39
AR49	GMAC1_RXD3/SDIO_D3_M1/I2S3_SDO/AUDDSM_RN/FSPI_D3_M2/UART8_RX_M1/SPI4_CS0_M1/GPIO3_A3_u	I/O	UP	GMAC1_RXD3	GMAC1_RXD3	VCCIO5 (1.8/3.3V)	AT40
AT48	GMAC1_TXD3/SDIO_D1_M1/I2S3_SCLK/AUDDSM_LN/FSPI_D2_M2/I2C6_SCL_M4/PWM11_IR_M0/SPI4_MOSI_M1/GPIO3_A1_u	I/O	UP	GMAC1_TXD3	GMAC1_TXD3	VCCIO5 (1.8/3.3V)	AR37
AT49	GMAC1_TXD2/SDIO_D0_M1/I2S3_MCLK/FSPI_D0_M2/I2C6_SDA_M4/PWM10_M0/SPI4_MISO_M1/GPIO3_A0_u	I/O	UP	GMAC1_TXD2	GMAC1_TXD2	VCCIO5 (1.8/3.3V)	AR38
AU48	GMAC1_MDIO/MIPI_TE1/I2C8_SDA_M4/UART7_CTSN_M1/PWM15_IR_M0/SPI1_CS1_M1/GPIO3_C3_d	I/O	DOWN	GMAC1_MDIO	GMAC1_MDIO	VCCIO5 (1.8/3.3V)	AW39
AU49	GND	G		GND			
AV49	GND	G		GND			
AW48	PDM0_CLK1_M0/I2C2_SDA_M3/PWM11_IR_M2/SPI4_CS1_M0/GPIO1_C4_d	I/O	DOWN	MIPI_CAM2_PDN_L	MIPI_CAM2_PDN_L	1.8V	U35
AW49	SPI2_CS1_M2/I2C1_SCL_M1/UART0_RX_M1/GPIO0_B0_z	I		RTC_INT_L	RTC_INT_Input ,Active L	1.8V	AC37



AY48	I2S0_SDO2/I2S0_SDI3/PDM0_SDI1_M0/I2C7_SDA_M0/UART6_RX_M2/SPI1_MOSI_M2/GPIO1_D1_d	I/O	DOWN	I2C7_SDA_M0_CODEC	I2C7_SDA_M0_CODEC	1.8V	U38
AY49	I2S0_SDO1/I2C7_SCL_M0/UART6_TX_M2/SPI1_MISO_M2/GPIO1_D0_d	I/O	DOWN	I2C7_SCL_M0_CODEC	I2C7_SCL_M0_CODEC	1.8V	U37
BA48	I2C3_SDA_M0/UART3_RX_M0/SPI4_MISO_M0/GPIO1_C0_z	I		SPK_CTRL	Speaker EN, Active H	1.8V	R38
BA49	REFCLK_OUT/GPIO0_A0_d	I/O	DOWN	WIFI_WAKE_HOST_H	WIFI_WAKE_HOST_H	1.8V	W38
BB48	I2S0_SDI1/PDM0_SDI3_M0/I2C1_SDA_M4/UART4_RX_M0/PWM1_M1/SPI1_CS0_M2/GPIO1_D3_d	I/O	DOWN	UART4_RX_M0	UART4_RX_M0		R39
BB49	I2S0_MCLK/I2C6_SDA_M1/UART3_RTSN/PWM3_IR_M2/SPI4_CLK_M0/GPIO1_C2_d	I/O	DOWN	I2S0_MCLK	I2S0_MCLK	1.8V	U36
BC49	I2S0_LRCK/I2C2_SCL_M3/UART4_RTSN/GPIO1_C5_d	I/O	DOWN	I2S0_LRCK_TX	I2S0_LRCK_TX	1.8V	P39
BD48	I2S0_SDO0/I2C4_SCL_M4/UART4_CTSN/GPIO1_C7_d	I/O	DOWN	I2S0_SDO0	I2S0_SDO0	1.8V	P41
BD49	I2S0_SCLK/I2C6_SCL_M1/UART3_CTSN/PWM7_IR_M2/SPI4_CS0_M0/GPIO1_C3_d	I/O	DOWN	I2S0_SCLK_TX	I2S0_SCLK_TX	1.8V	M42
BE48	I2S0_SDI0/GPIO1_D4_d	I/O	DOWN	I2S0_SDI0	I2S0_SDI0	1.8V	N42
BE49	GND	G		GND	GND		
BF48	PDM1_SDI2_M1/SPI0_MISO_M2/GPIO1_B1_d	I/O	DOWN	SPI0_MISO_M2	SPI0_MISO_M2		G39
BF49	PDM1_CLK1_M1/SATA0_ACT_LED_M1/UART4_TX_M2/SPI0_CLK_M2/GPIO1_B3_d	I/O	DOWN	SPI0_CLK_M2	SPI0_CLK_M2	1.8V	M37
BG48	PDM1_SDI3_M1/UART4_RX_M2/SPI0_MOSI_M2/GPIO1_B2_d	I/O	DOWN	SPI0_MOSI_M2	SPI0_MOSI_M2	1.8V	M38
BG49	PDM1_CLK0_M1/UART7_RX_M2/SPI0_CS0_M2/GPIO1_B4_u	I/O	UP	SPI0_CS0_M2	SPI0_CS0_M2	1.8V	M39

PIN	CORE-3588SG(U3D) CORE-3588SG-board pin definition	Pad type	IO Pull	Function for Main BOARD(MB-G-RK3588S)	Defual function description	IO Power domain	RK3588S Pin NO.
BJ49	GND	G		GND	GND		
BH49	GND	G		GND	GND		
BJ48	PDM0_SDI0_M0/SPI1_CS1_M2/GPIO1_D5_d	I/O	DOWN	MIPI_CAM1_RST_L	MIPI_CAM1_RST_L	1.8V	P38
BH48	I2S0_SDO3/I2S0_SDI2/PDM0_SDI2_M0/I2C1_SCL_M4/UART4_TX_M0/PWM0_M1/SPI1_CLK_M2/ GPIO1_D2_d	I/O	DOWN	UART4_TX_M0	UART4_TX_M0	1.8V	P40
BJ47	GND	G		GND	GND		
BH47	GND	G		GND	GND		



BJ46	PCIE20_0_REFCLKP	O		PCIE20_0_REFCLKP	PCIE20_0_REFCLKP		L42
BH46	PCIE20_0_REFCLKN	O		PCIE20_0_REFCLKN	PCIE20_0_REFCLKN		K41
BJ45	PCIE20_0_RXP/SATA30_0_RXP	I		PCIE20_0_RXP	PCIE20_0_RXP		J42
BH45	PCIE20_0_RXN/SATA30_0_RXN	I		PCIE20_0_RXN	PCIE20_0_RXN		J41
BJ44	PCIE20_0_TXP/SATA30_0_TXP	O		PCIE20_0_TXP	PCIE20_0_TXP		H41
BH44	PCIE20_0_TXN/SATA30_0_TXN	O		PCIE20_0_TXN	PCIE20_0_TXN		H42
BJ43	PCIE20_2_REFCLKN	O		NC	NC (PCIE20_2_REFCLKN)		F42
BH43	PCIE20_2_REFCLKP	O		NC	NC (PCIE20_2_REFCLKP)		F41
BJ42	GND	G		GND	GND		
BH42	GND	G		GND	GND		
BJ41	PCIE20_2_TXN/SATA30_2_TXN/USB30_2_SSTXN	O		USB30_2_SSTXN	USB30_2_SSTXN		D41
BH41	PCIE20_2_TXP/SATA30_2_TXP/USB30_2_SSTXP	O		USB30_2_SSTXP	USB30_2_SSTXP		E41
BJ40	PCIE20_2_RXN/SATA30_2_RXN/USB30_2_SSRXN	I		USB30_2_SSRXN	USB30_2_SSRXN		C42
BH40	PCIE20_2_RXP/SATA30_2_RXP/USB30_2_SSRXP	I		USB30_2_SSRXP	USB30_2_SSRXP		D42
BJ39	GND	G		GND	GND		
BH39	GND	G		GND	GND		
BJ38	PCIE20X1_1_WAKEN_M2/I2C2_SCL_M4/UART6_TX_M1/SPI4_MOSI_M2/GPIO1_A1_d	I/O	DOWN	GMAC1_RSTn_L	GMAC1_RSTn_L	VCCIO4 1.8/3.3V	L40
BH38	PDM0_CLK0_M0/I2C4_SDA_M4/PWM15_IR_M2/GPIO1_C6_d	I/O	DOWN	FAN_CTL	FAN_CTL	1.8V	M41
BJ37	MIPI_CAMERA3_CLK_M0/I2C8_SCL_M2/UART1_RTSN_M1/PWM14_M2/GPIO1_D6_u	I/O	UP	I2C8_SCL_M2_CAM	I2C8_SCL_M2_CAM	VCCIO4 1.8/3.3V	L37
BH37	MIPI_CAMERA4_CLK_M0/I2C8_SDA_M2/UART1_CTSN_M1/PWM15_IR_M3/GPIO1_D7_u	I/O	UP	I2C8_SDA_M2_CAM	I2C8_SDA_M2_CAM	VCCIO4 1.8/3.3V	G38
BJ36	MIPI_CAMERA1_CLK_M0/SPDIF0_TX_M0/I2C5_SCL_M3/UART1_TX_M1/GPIO1_B6_u	I/O	UP	GSENSOR_INT_L	GSENSOR_INT_Input, Active L	VCCIO4 1.8/3.3V	L38
BH36	MIPI_CAMERA2_CLK_M0/SPDIF1_TX_M0/SATA2_ACT_LED_M1/I2C5_SDA_M3/UART1_RX_M1/PWM13_M2/GPIO1_B7_u	I/O	UP	MIPI_CAM2_CLKOUT	MIPI_CAM2_CLK OUTPUT	VCCIO4 1.8/3.3V	F37



BJ35	GND	G		GND	GND		
BH35	GND	G		GND	GND		
BJ34	I2C4_SCL_M3/UART6_CTSN_M1/PWM1_M2/SPI4_CS0_M2/GPIO1_A3_d	I/O	DOWN	I2C4_SCL_M3	I2C4_SCL_M3	VCCIO4 1.8/3.3V	L39
BH34	VOP_POST_EMPTY/I2C4_SDA_M3/UART6_RTSN_M1/PWM0_M2/SPI4_CLK_M2/GPIO1_A2_d	I/O	DOWN	I2C4_SDA_M3	I2C4_SDA_M3	VCCIO4 1.8/3.3V	D38
BJ33	GND	G		GND	GND		
BH33	GND	G		GND	GND		
BJ32	I2C3_SCL_M0/UART3_TX_M0/SPI4_MOSI_M0/GPIO1_C1_z	I		MIPI_CAM2_RST_L	MIPI_CAM2_RST_L	1.8V	N41
BH32	GND	G		GND	GND		
BJ31	HDMI_TX0_HPD_M0/SPI2_MOSI_M0/GPIO1_A5_d	I/O	DOWN	TYPEC_DISCHARGE_L_EC	TYPEC_DISCHARGE_L_EC	VCCIO4 1.8/3.3V	M40
BH31	GND	G		GND	GND		
BJ30	PDM1_SDI0_M1/PCIE20X1_1_PERSTN_M2/PWM3_IR_M3/SPI2_CS0_M0/GPIO1_A7_u	I/O	UP	LCD0_BL_PWM	LCD0_BL_PWM	VCCIO4 1.8/3.3V	H38
BH30	GND	G		GND	GND		
BJ29	PDM1_SDI1_M1/SPI2_CS1_M0/GPIO1_B0_u	I/O	UP	TYPEC0_SBU1_DC	TYPEC0_SBU1_DC	VCCIO4 1.8/3.3V	H39
BH29	GND	G		GND	GND		
BJ28	PCIE20X1_1_CLKREQN_M2/DP0_HPDIN_M2/I2C2_SDA_M4/UART6_RX_M1/SPI4_MISO_M2/GPIO1_A0_d	I/O	DOWN	TYPEC0_SBU2_DC	TYPEC0_SBU2_DC	VCCIO4 1.8/3.3V	G40
BH28	GND	G		GND	GND		
BJ27	GND	G		GND	GND		
BH27	GND	G		GND	GND		
BJ26	SPI2_MISO_M0/GPIO1_A4_d	I/O	DOWN	EDP_TP_INT	EDP_TP_INT Input	VCCIO4 1.8/3.3V	G37
BH26	GND	G		GND	GND		
BJ25	SPI2_CLK_M0/GPIO1_A6_d	I/O	DOWN	EDP_HPDIN_M1	EDP_HPD_M1_INPUT	VCCIO4 1.8/3.3V	D39





BH25	GND	G		GND	GND		
BJ24	GND	G		GND	GND		
BH24	GND	G		GND	GND		
BJ23	UART7_TX_M2/SPI0_CS1_M2/GPIO1_B5_u	I/O	UP	TP0_INT_L	TP0_INT_L	VCCIO4 1.8/3.3V	D40
BH23	GND	G		GND	GND		
BJ22	GND	G		GND	GND		
BH22	GND	G		GND	GND		
BJ21	GND	G		GND	GND		
BH21	GND	G		GND	GND		
BJ20	GND	G		GND	GND		
BH20	GND	G		GND	GND		
BJ19	GND	G		GND	GND		
BH19	GND	G		GND	GND		
BJ18	GND	G		GND	GND		
BH18	GND	G		GND	GND		
BJ17	GND	G		GND	GND		
BH17	GND	G		GND	GND		
BJ16	GND	G		GND	GND		
BH16	GND	G		GND	GND		
BJ15	GND	G		GND	GND		
BH15	GND	G		GND	GND		
BJ14	GND	G		GND	GND		
BH14	GND	G		GND	GND		
BJ13	GND	G		GND	GND		



BH13	GND	G		GND	GND		
BJ12	GND	G		GND	GND		
BH12	GND	G		GND	GND		
BJ11	GND	G		GND	GND		
BH11	GND	G		GND	GND		
BJ10	GND	G		GND	GND		
BH10	GND	G		GND	GND		
BJ9	GND	G		GND	GND		
BH9	GND	G		GND	GND		
BJ8	GND	G		GND	GND		
BH8	GND	G		GND	GND		
BJ7	GND	G		GND	GND		
BH7	GND	G		GND	GND		
BJ6	GND	G		GND	GND		
BH6	VCCIO4_CTL	O		VCCIO4_CTL	Default NC:VCCIO4=1.8V), H:VCCIO4=3.3V	3.3V	
BJ5	GND	G		GND	GND		
BH5	VCCIO5_CTL	O		VCCIO5_CTL	Default NC:VCCIO5=1.8V), H:VCCIO5=3.3V	3.3V	
BJ4	GND	G		GND	GND		
BH4	GND	G		GND	GND		
BJ3	GND	G		GND	GND		
BH3	GND	G		GND	GND		
	<b>VCCIO4_CTL = H , VCCIO4 = 3.3 V ; VCCIO4_CTL = L , VCCIO4 = 1.8 V</b> <b>VCCIO5_CTL = H , VCCIO5 = 3.3 V ; VCCIO5_CTL = L , VCCIO5 = 1.8 V</b>						



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